BOOK REVIEWS

Modern Genetics

The development of modern genetics has brought increasingly close relationships between the facts of heredity and the fields of evolution, embryology, cellular biochemistry and cytology. The author of the present volume, believing that these relationships rather than the mere mechanics of Mendelian segregation should be the theme of genetics text books, has written a text with this in mind. Mendelian inheritance itself is given short shrift in a few pages: perhaps too short for the elementary student. Then follow very fine discussions of the chromosome cycle and its modifications, the behavior of individual chromosomes, the linear differentiation of chromosomes, including an excellent account of crossing over and chiasmata. The foregoing topics comprise Part I. Part II considers the facts of embryology and their relations with genes and gene interactions. Part III is devoted to genetics and evolution, with up-to-date discussions of species formation, selection, cytoplasmic inheritance and related topics. Part IV takes up genetics and human affairs, including plant and animal breeding and a modern discussion of human inheritance. Part V is given over to a discussion of the nature of the gene. Here are discussed such topics as cellular biochemistry, effects of radiation, position effects, rate and causes of mutation, and estimates as to the size of the gene. The book is well illustrated and the references are frequent and modern. Teachers of genetics will find the book invaluable, but it appears to be somewhat in advance of the usual elementary genetics class. Perhaps beginning courses in genetics should be geared to this higher rate of progress. The book can be unreservedly recommended for advanced classes. A short appendix gives a concise account of methods of using Drosophila in class work. A surprising number of grammatical errors mars the otherwise pleasurable reading of the volume.—*L. H. S.*

An Introduction to Modern Genetics, by C. H. Waddington. 441 pp. New York, the Macmillan Co., 1939. $4.00.

A New Genetics Textbook

The new genetics text, "An Introduction to Genetics," by Beadle and Sturtevant, is unique in several respects. Of the twenty-three chapters, thirteen are devoted to a discussion of the ordinary behavior of chromosomes and hereditary factors. Five chapters are given over to a discussion of the various types of chromosomal aberrations and polyploidy. A separate chapter is devoted to each of the following topics: position effects, species differences, extra-chromosomal inheritance and material influences, genes and phenotypes, and a historical outline of genetics.

The order of presentation is most unusual. The first two chapters deal with sex chromosomes and sex-linked factors. Mendel and autosomal inheritance not being mentioned until the third chapter. Chapters on inversions and incomplete chromosomes precede the chapters on lethals and multiple allels. Special emphasis is placed upon both normal and abnormal chromosomal behavior, with abundant references to Drosophila and maize. A full page plate illustrates nine eye colors in Drosophila, and two other page plates show excellent photomicrographs of both normal and abnormal chromosomal configurations. Diagrams are numerous, but only a few photographs are included. There are problems at the end of each chapter. Probability is discussed in the appendix.

The reviewer gained the impression that the title, "An Introduction to Genetics," is a misnomer, as the book is too technical for the beginning student. Very little is said about human heredity, and the simpler modern statistical techniques, such as chi-square, are not mentioned. The book should be a valuable reference for advanced students in genetics, especially those primarily interested in Drosophila and chromosomal phenomena.—*D. C. Rife.*

An Introduction to Genetics, by G. W. Beadle and A. H. Sturtevant. xxiii+ 391 pp. W. B. Saunders Company, Philadelphia, 1939.